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ABSTRACT

This study analyzes the use of external links on Ohio public library World Wide Web sites, focusing on methods used to facilitate access to Internet resources. The categorization of links was analyzed, with specific focus on the organization, scope, and presentation of links arranged topically. This study suggests that the public libraries of Ohio are at different stages in the process of creating effective Web sites with well-selected, organized, and presented links, but clearly are working toward the goal of providing enhanced access to Internet resources. Of the 113 Web sites analyzed, 109 had at least one link to an Internet resource created outside of the library's Web site. Nearly 47% organized links topically, into ready reference areas. The organization and scope of the ready reference areas varied widely. The number of links provided in the ready reference areas ranged from 1 to 1,718, with nearly 40% providing fewer than 25 links. Approximately 50% of ready reference areas were organized using a broad categorization scheme, with the remaining 50% listing links without using categories or categorizing randomly without any attempt at exhaustiveness. Annotations were the most commonly applied presentation technique studied, used by 62.2% of libraries that organized links into ready reference areas. Appendices include a coding sheet and population sample data. (Contains 16 references.) (Author/MES)

**USING LINKS TO FACILITATE ACCESS TO INTERNET RESOURCES:
A CONTENT ANALYSIS OF OHIO PUBLIC LIBRARY WEB SITES**

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**A Master's Research Paper submitted to the
Kent State University School of Library
and Information Science
in partial fulfillment of the requirements
for the degree Master of Library Science**

by

Susan Gortner Mason

November 1998

Master's Research Paper by

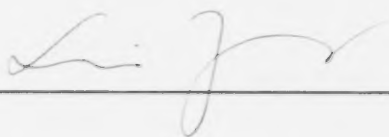
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CHAPTER I

INTRODUCTION

Internet access is quickly emerging as a fundamental component of public library service. According to The 1997 National Survey of U.S. Public Libraries and the Internet, the percentage of public library systems offering public access to the Internet more than doubled between 1996 and 1997, increasing from 27.8% to 60.4%. Of the libraries that were not connected when surveyed, 41.8% indicated plans for providing public access to the Internet within 12 months. Including this projected connectivity, 75.3% of public libraries were expected to provide public access to the Internet by May 1998, serving 91.3% of the U.S. population (Bertot, McClure, and Fletcher 1997).

The role of librarians is changing as Internet access becomes increasingly prevalent in public libraries. In Buildings, Books, and Bytes, a report summarizing public opinion regarding the role of libraries in the Digital Age, 58% of respondents rated the role of librarians as information navigators as very important (Benton 1996). When asked about the library as a place where librarians help people find information through computers and online services, 85% of respondents rated this as either very or moderately important (Benton 1996).

One way librarians are filling the role of "information navigators" is by creating and maintaining library Web sites. In 1997, 10.4% of U.S. public libraries reported having Web sites, compared to 1.2% in 1996 (Bertot, McClure, and Fletcher 1997). Library Web sites serve as an additional way for librarians to try to make information resources available to as many people as possible and to ensure resources are being used effectively and fully (Still 1997).

Public libraries are including a variety of information on their Web sites. Most sites provide basic information about the library system, such as policies, phone numbers, and hours of operation. Some are also beginning to include interactive elements, such as fill-out forms, which allow users to submit reference questions or register for programs. Library Web sites may also provide access to library resources, such as the online catalog or electronic databases. Special collections or exhibits may be showcased using images, sound, video, and text (Garlock and Piontek 1996).

Resources designed to assist patrons in locating, evaluating, and using information are also being included on library Web sites. Pathfinders and other guides found in print at the library are being made available on library Web sites, as are new resources created specifically for the Web environment. Public library Web sites often include links to local agencies and information sources, providing a useful compilation of resources available to the community and beyond.

Subject guides to Internet resources are an especially valuable component of public library Web sites. Librarians are using their expertise in evaluating and organizing information to select, classify, and present links to Internet resources. Subject guides to Internet resources provide an additional format for helping patrons discover and access information:

Librarian-developed Web guides serve the same purpose as traditional bibliographies and pathfinders: They help direct patrons through a maze of information by identifying and describing resources with valuable content, reducing the amount of time patrons must sift through layers of information on their own before discovering the source that provides what they really need (Champelli and Rosenbaum 1997, 27).

Background of the Sample Population

According to the list maintained by the State Library of Ohio, currently 45.2% of Ohio's 250 public libraries maintain a Web site. This substantial rate reflects Ohio's status as a well funded public library state and, more specifically, the presence of the Ohio Public Library Information Network (OPLIN).

OPLIN is funded by the State of Ohio "to ensure equity of access to information for all Ohio citizens, who must be able to use their public library to access an ever-increasing amount of electronic information sources" (Mansfield 1997, 44). OPLIN provides telecommunications access, lines, and equipment for 249 of the state's 250 main public libraries.

The OPLIN Web site [URL:<http://www.oplin.lib.oh.us>] offers extensive links to Internet resources and provides access to commercial databases. Links are selected and organized into six categories: "Current Events," "Libraries," "Electronic Resources," "OH! Kids," "Discover Ohio," and "About OPLIN." The broad category "Electronic Resources" includes over 600 links to Internet resources arranged in 19 different subject areas. OPLIN also provides unlimited access to 9 commercial databases to Ohio's public libraries.

Purpose of the Study

This study analyzes the use of links on Ohio public library Web sites, focusing on the methods used to facilitate access to Internet resources. Broad categorization of links is analyzed, with specific focus on the organization, scope, and presentation of links arranged topically. The findings of this study are used to identify and evaluate efforts made by Ohio public libraries to describe, classify, and provide access to Internet resources.

Limitations of the Study

This study is limited to the Web pages of the public libraries in Ohio, and the findings are not necessarily generalizable to all public library Web pages. Due to the evolving and impermanent nature of Internet resources, the Web sites included in this study may not continue to exist in the same format as when analyzed.

Definitions of Terms

This study is concerned with resources that are available on the Internet, the worldwide "network of networks" that are connected to each other, using the IP protocol and other similar protocols. The World Wide Web (WWW) is the subset of the Internet that is based on hypertext documents and is structured by links between pages of hypertext.

A link appears onscreen as a highlighted word, icon, or graphic. This study is concerned with links that, when selected, take the user to a resource developed and maintained outside of the library Web site. A Web site includes related documents residing together on a Web host computer. Documents are identified by their WWW address, the Uniform Resource Locator (URL).

CHAPTER II

REVIEW OF THE LITERATURE

As the Internet becomes an increasingly popular format for information, there is a growing consensus that librarians need to play a key role in facilitating access to Internet resources. Many see selecting and organizing links to Internet resources as a natural extension of traditional collection development.

Smith views the creation of guides to Internet resources "as a logical role for librarians, extending to the online environment the traditional librarian's role of evaluating, selecting, and organizing published information" (1997, 5). Smith attempts to assist librarians in this new role by proposing a "toolbox of criteria" to be used in the evaluation of Internet resources (1997, 6). He surveys published information from Web and print sources to create a list of twenty evaluation criteria. To find the most popular criteria, he compares his findings against the selection policies of Web sites that evaluate Internet information sources.

Piontek and Garlock (1995) and Cohen (1997) provide information to assist academic librarians in facilitating access to Internet resources. Piontek and Garlock view librarians as "uniquely qualified for creating usable collections of WWW resources" (1995, 12). Their article discusses topics relating to Web collection development, including subject directories, search engines, search strategies, and evaluation and presentation techniques. Cohen also discusses subject directories, search engines, and evaluation criteria. She presents these as tools to assist the librarian with the challenge of negotiating the reality of the Internet as "a mass of undifferentiated and unclassified material" with the user expectations "that the Internet will provide easy access to valuable information" (1997, 5).

Rosenfeld (1994) and Dodd (1996) also argue that librarians play a crucial role in enhancing access to Internet resources. Rosenfeld discusses librarian created subject-oriented guides to Internet resources as "value-added repackaging" (1994, 11). Dodd examines the structure and principles of various hierarchical lists and the different approaches taken in efforts to organize and provide access to Internet resources.

Very few studies involving content analysis of Web sites were found in preparation for this study. Bates and Lu (1997) analyzed 114 personal home pages for patterns and trends in home page content and design in order to develop a preliminary profile of personal home pages. They selected a random sample from approximately 5000 entries that were part of a personal home page directory. Specific elements that were analyzed included the purpose and organizational structure of the home page and the number and type of hypertext links within the pages.

Burt (1997) surveyed library Web sites to gain information about an important issue in public libraries, public Internet access policies. Burt searched over three hundred public library home pages listed on a directory for information published regarding Internet access policies. Policies were downloaded and analyzed to identify common elements from the seventy-five libraries that were found to have policies published on their Web site.

Neth (1998) used the approach of citation analysis to study the linked sources on art library Web pages. Neth found that by including evaluated links to outside resources on library Web sites, librarians were "creating unique scholarly resources" appropriately regarded as "an aspect of traditional library collection development" (1998, 29). Her study examined twenty-five Web sites of art libraries to determine what links to Internet sites were most often

included. Links were analyzed individually to identify the most popular Web sites and grouped into 19 categories to delineate the frequency of different types of resources. Neth also conducted an electronic survey of Webmasters to determine the level of evaluation involved in selection decisions. Her findings indicated that art librarians are exercising "critical thought and evaluation" in "creating unique Web resources comparable to physical library collections" (1998, 33).

Clyde (1996) summarizes findings of a content analysis of the home pages of 50 public libraries and 50 school libraries from an International study of 13 counties. The home pages, including 23 from U.S. public libraries, were randomly selected from a directory on the Internet and downloaded in September 1996. A matrix, which included 30 features that might be found on a library Web site, was used to record the specific elements of each Web site. The following are some of the features included on the matrix: name of library; basic information about the library; link to the library catalog; information about Internet access and policies at the library; annual report of the library; and links to selected resources on the Internet.

Clyde found that 38 of 50 public library home pages included links to selected resources on the Internet. She notes that links generally were "selected by the library staff to meet the needs of library users" and "ranged from a short list of links to index or directory sites to lists that incorporated hundreds of links" (1996, 554). Most of the library Web sites arranged links according to broad subject categories or by type of user, such as children, teenagers, business people, or teachers. Additional findings further delineate organization of Internet links: fourteen of the libraries provided Internet links for children; 31 libraries

included links to resources about the local area or region; and 15 of the pages had links to Internet search engines.

Researching methods used to enhance access to Internet resources is important, given the growing prominence of the Internet. This study will conduct content analysis on Web sites in light of the growing role of librarians in selecting, organizing, and presenting links to Internet resources.

CHAPTER III

METHODOLOGY

The sample of this study includes all of the Ohio public library Web sites that were listed on the State Library of Ohio Web page titled "Ohio Public Library Web Sites and/or Internet-Accessible Catalogs" [URL:<http://winslo.ohio.gov/libtable.html>] on October 20, 1998. The State Library of Ohio constructs their list from information supplied by Ohio public libraries. Because of the potential instability of Internet resources, the content analysis was conducted during a three day period, October 21-23, 1998. Access was limited to the link provided on the State Library of Ohio Web page. No independent searching or URL correction was performed.

A coding sheet was developed to uniformly apply measures across the sample (see appendix A). The sites were first analyzed for the presence of external links, meaning links to Internet resources created and maintained outside of the library's Web site. The second question asked whether any links were arranged in a Ready Reference area. This distinction was used to indicate links that were arranged topically. Examples of page titles that were considered as Ready Reference areas include "Favorite Links," "Web Guide," "Recommended Web Links," "World Wide Web Starting Points," "Internet Resources," and "Bookmarks."

Next, any categorization of links to Internet resources that were not part of a Ready Reference area were noted according to the following options: Children, Young Adult, Community/Local, OPLIN, Search Tools, Other Libraries, Online Databases, Other, and None. Some Web sites did not have any broad categorization of Internet resources that fit the

criteria of Ready Reference, but did have extensive Internet resources provided specifically for children. Others provided extensive links to local resources, such as government, schools, and organizations, but did not select or organize broader Internet resources.

The variations in categorization of links to Internet resources were important to note in compiling an accurate picture of the types of links provided from public library Web pages, but were too numerous and diverse to do any extensive analysis in this study. Therefore, additional analysis, which focused on organization, scope, and presentation, was limited to links organized into Ready Reference areas.

Some Web sites included categories, such as OPLIN or Community/Local, as part of a broad topical scheme. In these cases the links were included in further analysis because the library included them in a Ready Reference area. For example, if a library provided a section for children in a broad scheme titled "Internet Resources" it was included, whereas if a library had a page titled "Links for Kids" that was entirely separate from a Ready Reference area it was not analyzed further.

A scale of five options was used to denote the organizational structure of Ready Reference areas. The first option describes links that were not arranged into any categories, but were listed alphabetically or otherwise without any attention paid to content. The next option includes links that were organized into categories, but without any attempt at exhaustiveness. The third option describes links that were arranged into broad categories with thorough subject coverage. The fourth option includes links that were arranged into broad categories with additional hierarchical groupings. The final category includes links that were

arranged according to an established library classification scheme, such as Dewey Decimal Classification.

After classifying the organizational structure, the number of links provided in a Ready Reference area were recorded. All links were counted without regard to duplication. The final questions analyzed whether there were any additional attempts to facilitate access in the presentation of Ready Reference links. The presence or absence of a selection statement, annotations, or a listed URL were noted.

The ranking of each library according to the amount of LLGSF tax revenue that it received in 1997 was recorded from Statistics of Ohio Libraries, to ascertain any relationship between the provision of links and the size of the libraries. The LLGSF (Library and Local Government Support Fund) is state income tax money for the general operation of library districts distributed to the public libraries through the county auditors. The 51st edition of the American Library Directory was used to record the population served by each library.

CHAPTER IV

ANALYSIS OF DATA

When the sample for this study was accessed from the State Library of Ohio Web site, on October 20, 1998, a URL was listed for 113 of Ohio's 250 public libraries (see figure 1). All of the Web sites were accessible using the provided URL during the period of study. The sites were first analyzed for the presence of links to Internet resources maintained outside of the library's site. Of the 113 Web sites analyzed, 109 (96.5%) had at least one external link.

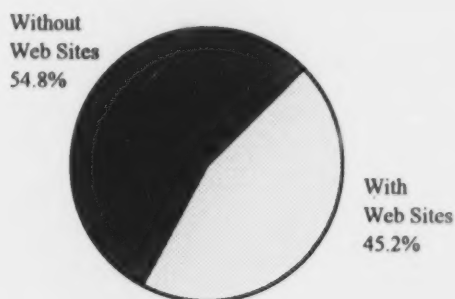


Figure 1 Percentage of Ohio public libraries with Web sites.
State Library of Ohio. October 20, 1998.

The arrangement of links to Internet resources was analyzed using predefined categories. Ready Reference areas were noted, as were other categories that were used to organize links to Internet resources (see table 1). The most frequently used category to link Internet resources from was OPLIN, appearing in 68 of 113 sites. The second most common category was Community/Local, used by 51.3% of libraries. The scope and depth of resources in this category varied considerably, from one or two key links to comprehensive coverage of local Internet resources.

Table 1.

Distribution of the categories used to organize links to Internet resources.

Categories	f	%
OPLIN	68	60.2
Community/Local	58	51.3
Ready Reference	53	46.9
Children	46	40.7
Online Databases	39	34.5
Other	38	33.6
Other Libraries	27	23.9
Search Tools	23	20.4
Young Adult	19	16.8
No External Links	4	3.5

Nearly 41% of libraries provided links for Children separate from a Ready Reference area. A smaller percentage, 16.8%, provided a distinct section for Young Adults. The category Search Tools, typically consisting of links to search engines and/or directories, was used by 20.4% of the libraries. Online Databases was a commonly used category, with 34.5% of libraries organizing links under this designation. For the category to be included, at least one of the database links needed to be accessible to users outside of the library and without a library card. Nearly 24% of libraries provided links under the category Other Libraries.

A variety of topics not included as predefined categories on the coding sheet were noted in the Other category. Additional topics provided by some libraries include Business Resources, Job Hunting Resources, Voter Information, Financial Aid Resources, and Internet

Tutorials. Several topics designed for specialized audiences were also noted in the Other category, including Senior Citizens, Educators, and Parents.

Of the 109 Web sites that included external links, 53 (48.6%) organized links into Ready Reference areas. As with the categories used to organize other kinds of links, the scope and depth of Ready Reference links varied considerably. The number of links provided ranged from one to 1718. Since the data set is skewed by the high end of the range, the median is a more accurate description of the set at 75, than the mean at 228.3. Nearly 55% of the Ready Reference areas included less than 100 links, with nearly 40% providing 25 links or fewer (see table 2). The top range, 701 or more, described 5.7% of libraries with Ready Reference areas and included the numbers of 755, 781, and 1718.

Table 2.

Distribution of the number of links provided in Ready Reference areas.

Number of Links	f	%
1-100	29	54.7
1-10	10	18.9
11-25	11	20.8
26-100	8	15.1
101-200	5	9.4
201-300	2	3.8
301-400	4	7.5
401-500	3	5.7
501-600	5	9.4
601-700	2	3.8
701 or more	3	5.7
Total	53	100.0

The organizational structure of Ready Reference areas was analyzed using a scale of five options (see table 3). Random categorization was the most frequent organizational scheme, used by 32.1% of libraries with Ready Reference areas. Nearly 25% of libraries used broad categorization in organizing Ready Reference areas. Nearly 21% of libraries added hierarchical groupings to a broad categorization scheme. Approximately 19% of libraries simply listed Internet links without any grouping by categories. The Dewey Decimal Classification System was used by two (3.8%) libraries to organize links.

Table 3.

Distribution of the organizational structure of Ready Reference areas.

Organizational Structure	f	%
No Groupings by Categories	10	18.9
Random Categorization	17	32.1
Broad Categorization	13	24.5
Hierarchical Groupings	11	20.8
Library Classification Scheme	2	3.8
Total	53	100.0

The Ready Reference areas were also analyzed for the presence or absence of presentation techniques. Neither a selection statement or a written URL were commonly provided, with only 3.8% and 7.5% of sites utilizing them respectively. Annotations were provided for at least some of the links by 33 (62.3%) of the libraries that had Ready Reference links.

The 1998-99 American Library Directory was used to record the population served by the libraries in this study. The figures ranged from 2,256 to 995,565 (see appendix B). Service population figures were not reported for eighteen of the libraries. The 1998 Statistics of Ohio Libraries was used to record the LLGSF tax revenue ranking of each of the libraries. LLGSF rankings were used to evaluate the relationship between the LLGSF ranking of the libraries and the presence of Web sites and Ready Reference areas (see table 4).

Table 4.

Distribution of libraries with Web sites and Ready Reference areas by LLGSF rankings.

LLGSF Rankings	<u>Libraries with</u> <u>Web Sites</u>		<u>Libraries with</u> <u>Ready Reference Areas</u>	
	f	%	f	%
1-50	34	30.1	20	37.7
51-100	27	23.9	16	30.2
101-150	19	16.8	9	17.0
151-200	23	20.4	7	13.2
201-250	10	8.8	1	1.9
Total	113	100.0	53	100.0

The highest 50 ranked libraries according to LLGSF tax revenue were the most likely to have a Web site, while the lowest 50 LLGSF ranked were the least likely to have a Web site (see figure 2). A positive correlation was also found between the presence of Ready Reference areas and the LLGSF tax revenue ranking (see figure 3).

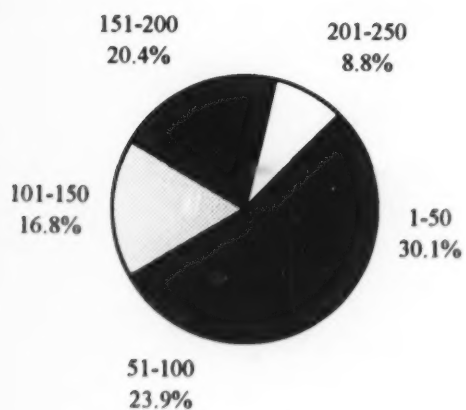


Figure 2. Libraries with Web sites distributed by LLGSF ranking.

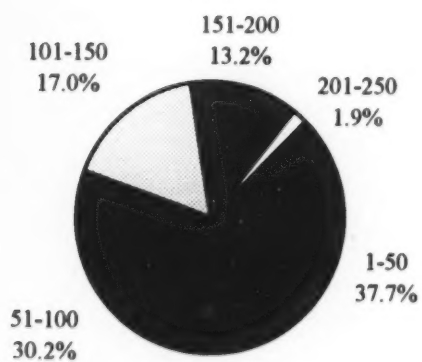


Figure 3. Libraries with Ready Reference areas distributed by LLGSF ranking.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study analyzed the use of external links on Ohio public library Web sites, focusing on the methods used to facilitate access to Internet resources. Content analysis was conducted on the 113 Ohio public library Web sites that were included on the list maintained by the State Library of Ohio on October 20, 1998. The categorization of links to Internet resources was analyzed using the following predefined categories: Ready Reference, Children, Young Adult, Community/Local, OPLIN, Search Tools, Other Libraries, Online Databases, and Other. Additional questions focused on the organization, scope, and presentation of links arranged into Ready Reference areas.

The findings of this study suggest that Ohio public libraries are making strong efforts to create Web sites that not only provide information about their library systems but also facilitate access to Internet resources developed and maintained outside of the library. Forty-five percent of Ohio's public libraries have a Web site, compared to the 1997 national average of 10.4%. Ninety-six percent of the libraries that have Web sites provide at least one external link. Forty-seven percent of the libraries with Web sites organize links topically, into Ready Reference areas.

The impact of OPLIN was clearly evident in the study. Over 60% of libraries with Web sites provide a direct link to OPLIN resources, separate from any Ready Reference links. Additional libraries included links to OPLIN resources within their Ready Reference areas. OPLIN provides a strong starting point for Ohio public libraries to develop useful Web sites by providing Internet access, links to Internet resources, and access to commercial databases.

Ohio public libraries are playing an central role in facilitating access to information about their own communities. Over 51% of the libraries organized links to Internet resources under the category Community/Local, independent of Ready Reference areas. These areas ranged from one or two links to key community resources, such as the Visitors' Bureau or Chamber of Commerce, to comprehensive coverage of many local entities, including schools, government, media, parks and recreation, nonprofit organizations, and local history resources.

Many Ohio public libraries are also emphasizing services to children on their Web sites. Nearly 41% of libraries provided links from a Children's area. Concerns about access issues were evident, with many sites providing information about Internet access policies and collections of links for parents and others concerned with Internet use by children. Links from Young Adult areas were significantly less common, provided by 16.8% of libraries.

The organization and scope of the 53 Ready Reference areas varied widely. Just under 50% of the libraries with Ready Reference areas utilized an organizational scheme consisting of either broad categorization, broad categorization with hierarchical groupings, or an established library classification scheme. The other 50% simply listed links without using any categories or categorized randomly without any attempt at exhaustiveness. Over half of the libraries provided fewer than 75 Ready Reference links, with the remaining libraries providing between 80 and 1718 links.

A highly developed classification scheme and large numbers of links did not necessarily ensure ready access to Internet resources. A site listing 500 links in a hierarchical arrangement, but without any strategies to enhance retrieval, may not actually facilitate user access. Workability and design considerations are important. Large number of links that are

not judiciously selected, organized, or presented are readily available through existing search engines and do not necessarily add value to library Web sites.

The use of annotations was commonly applied, with 62.2% of libraries with Ready Reference areas providing annotations for some of the links. Sites that did not provide annotations for all of their Ready Reference links, often applied them in a random manner rather than reserving them for the less intuitive or recognizable links. Explicit selection statements were uncommon, with only 2 (3.8%) libraries providing a detailed explanation of their selection criteria for Ready Reference links. Many libraries described their Ready Reference links as recommended, without providing any criteria for inclusion. Four (7.5%) of the libraries provided a written out URL for Ready Reference links. Although not essential, a written out URL can often provide useful information about the purpose and origin of a site.

Ohio's public libraries serve a wide variety of populations, ranging from small, rural townships to large metropolitan areas. There was some relationship between the size of the library and the presence of a Web site. The top 50 ranked libraries according to LLGSF tax revenue were the most likely to have a Web site, with 30.1% of the 113 Web sites falling in this range. The lowest 50 LLGSF ranked were the least likely to have a Web site, making up 8.8% of the sample. A stronger relationship was found between the LLGSF ranking and the provision of Ready Reference links. The top 100 ranked libraries according to LLGSF tax revenue made up nearly 68% of the libraries that provided Ready Reference links. Only one library in the 201-250 ranked libraries provided a Ready Reference area.

Ohio public librarians are filling the emerging role of information navigators by creating Web sites that facilitate access to Internet resources. The public libraries of Ohio are

at different stages in the process of creating effective Web sites with well selected, organized, and presented links, but the goal of enhanced access to Internet resources is clearly in place. Undoubtedly progress will continue, ensured by the strong commitment to library service in Ohio, the fluid nature of the Web environment, and the continued growth of the Internet as a vital source for information.

APPENDIX A

CODING SHEET

ID Number

____ Yes ____ No

Does the site have any external links?

____ Yes ____ No

Does the site organize any links into a Ready Reference area?

Other than links organized into a Ready Reference area, which of the following categories does the site link Internet resources from:

____ Children

____ OPLIN

____ Online Databases

____ Young Adult

____ Search Tools

____ Other

____ Community/Local

____ Other Libraries

____ None

What is the organizational structure of any links organized into a Ready Reference area?

____ no grouping by categories

____ random categorization

____ broad categorization

____ broad categorization with hierarchical groupings

____ established library classification scheme

How many links are provided in a Ready Reference area?

____ Yes ____ No

Is there any explicit statement describing selection criteria for Ready Reference links?

____ Yes ____ No

Are any Ready Reference links annotated to indicate content?

____ Yes ____ No

Is the URL written out for any Ready Reference links?

What is the population served according to the *American Library Directory*?

What is the LLGSF ranking according to *Statistics of Ohio Libraries*?

APPENDIX B

SAMPLE POPULATION

ID#	Library Name	City	URL	Population Served ¹	LLGSF Ranking ²
001	Paulding County Carnegie Library	Paulding	http://library.norweld.lib.oh.us/Paulding/	NA	117
002	Ashland Public Library	Ashland	http://www.ashland.lib.oh.us/	51,240	74
003	Fairfield County District Library	Lancaster	http://netra.clc.lib.oh.us/fcd/	119,000	28
004	Public Library of Mt. Vernon & Knox County	Mt. Vernon	http://www.knox.net/knox/library/welcome.htm	46,267	64
005	Community Public Library	Leetonia	http://www.leetonia.lib.oh.us/	5,000	196
006	Toledo-Lucas County Public Library	Toledo	http://www.library.toledo.oh.us	462,361	6
007	McComb Public Library	McComb	http://library.norweld.lib.oh.us/McComb	NA	186
008	Pemberville Public Library	Pemberville	http://library.norweld.lib.oh.us/Pemberville/	NA	173
009	Sylvester Memorial Wellston Public Library	Wellston	http://www.smwpl.lib.oh.us	10,000	177
010	Bristol Public Library	Bristolville	http://www.bristol.lib.oh.us	NA	156
011	Cleveland Public Library	Cleveland	http://www.cpl.org/	505,616	2
012	Weston Public Library	Weston	http://library.norweld.lib.oh.us/Weston/	24,000	171
013	Community Public Library	St. Marys	http://library.norweld.lib.oh.us/stmarys/	12,000	154
014	Kingsville Public Library	Kingsville	http://www.kingsville.lib.oh.us	NA	214
015	Jackson City Library	Jackson	http://www.jacksoncity.lib.oh.us	27,181	164
016	Conneaut Carnegie Public Library	Conneaut	http://www.conneaut.lib.oh.us	17,000	151
017	Lane Public Library	Hamilton	http://www.lanepl.lib.oh.us/cis/lpl	165,466	10
018	Briggs Lawrence County Public Library	Ironton	http://www.lawrence.lib.oh.us	64,258	41

ID#	Library Name	City	URL	Population Served ¹	LLGSF Ranking ²
019	Sandusky Library	Sandusky	http://www.sandusky.lib.oh.us	52,000	50
020	Tiffin-Seneca Public Library	Tiffin	http://www.tiffinsen.lib.oh.us/	61,901	78
021	Salem Public Library	Salem	http://www.salemohio.com/library/	17,215	98
022	Bluffton-Richland Public Library	Bluffton	http://library.norweld.lib.oh.us/Bluffton/	NA	203
023	Akron-Summit County Public Library	Akron	http://www.ascpl.lib.oh.us/	435,000	7
024	Kaubisch Memorial Public Library	Fostoria	http://library.norweld.lib.oh.us/Kaubisch/	25,000	114
025	Warren-Trumbull County Public Library	Warren	http://www.wtcpl.lib.oh.us/	160,721	18
026	Wauseon Public Library	Wauseon	http://library.norweld.lib.oh.us/Wauseon	10,638	195
027	Rocky River Public Library	Rocky River	http://www.rrpl.org/	20,410	92
028	Mason Public Library	Mason	http://www.masonpl.lib.oh.us	30,000	104
029	Oak Harbor Public Library	Oak Harbor	http://library.norweld.lib.oh.us/Oak-Harbor/	7,000	197
030	Lepper Public Library	Lisbon	http://www.lepper.lib.oh.us	58,000	130
031	Kent Free Library	Kent	http://www.kentfreelibrary.org	26,164	62
032	Portage County District Library	Garrettsville	http://www.portagecounty.lib.oh.us	85,000	34
033	Lakewood Public Library	Lakewood	http://www.lkwdpl.org	62,000	32
034	Alger Public Library	Alger	http://www2.wcoil.com/~adanet/algerlibrary.html	NA	250
035	Holmes County District Public Library	Millersburg	http://www.molo.lib.oh.us/home/holmes/default.htm	36,000	83
036	Williams County Public Library	Bryan	http://www.williamsco.lib.oh.us/	37,588	79
037	Evergreen Community Library	Metamora	http://library.norweld.lib.oh.us/evergreen	7,000	213
038	Hubbard Public Library	Hubbard	http://www.hubbard.lib.oh.us	16,520	101

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039	Ashtabula County District Library	Ashtabula	http://www.ashtabula.lib.oh.us	63,000	61
040	Birchard Public Library	Fremont	http://www.birchard.lib.oh.us/	47,700	55
041	Portsmouth Public Library	Portsmouth	http://www.portsmouth.lib.oh.us	80,327	30
042	Rock Creek Public Library	Rock Creek	http://www.rockcreek.lib.oh.us	2,256	233
043	Clark County Public Library	Springfield	http://www.ccpl.lib.oh.us/	147,500	13
044	Findlay Hancock County District Library	Findlay	http://www.findlay.lib.oh.us/	65,900	33
045	Medina County District Library	Medina	http://www.medina.lib.oh.us	125,000	24
046	Stark County District Library	Canton	http://www.molo.lib.oh.us/home/stark/index.html	367,585	9
047	Kinsman Free Public Library	Kinsman	http://www.kinsman.lib.oh.us/	8,057	144
048	Rodman Public Library	Alliance	http://www.rodman.lib.oh.us/rpl/	37,960	45
049	Alexandria Public Library	Alexandria	http://mocin.denison.edu/libraries/alex/alexhome.htm	NA	200
050	Grand Valley Public Library	Orwell	http://www.grandvalley.lib.oh.us/	2,500	232
051	Swanton Public Library	Swanton	http://library.norweld.lib.oh.us/Swanton/	14,700	182
052	Minerva Public Library	Minerva	http://www.minervaohio.com/library.htm	13,000	115
053	Community Library	Sunbury	http://community.lib.oh.us	NA	141
054	Mansfield-Richland County Public Library	Mansfield	http://www.mrcpl.lib.oh.us/	131,217	15
055	Coshocton Public Library	Coshocton	http://www.coshocton.lib.oh.us	35,427	68
056	Wayne Public Library	Wayne	http://library.norweld.lib.oh.us/Wayne/	8,800	185
057	Ida Rupp Public Library	Port Clinton	http://library.norweld.lib.oh.us/IdaRupp/	20,000	109
058	Way Public Library	Perrysburg	http://www.wcnet.org/~waylib	25,000	77

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059	Harbor-Topky Memorial Library	Ashtabula Harbor	http://www.harbortopky.lib.oh.us	47,475	183
060	Washington-Centerville Public Library	Centerville	http://www.wcpl.lib.oh.us	50,213	43
061	Bellevue Public Library	Bellevue	http://www.bellevue.lib.oh.us	55,000	124
062	Plain City Public Library	Plain City	http://www.plain.lib.oh.us/	NA	176
063	Public Library of Cincinnati and Hamilton County	Cincinnati	http://plch.lib.oh.us	866,228	1
064	Highland County District Library	Hillsboro	http://family.hopewell.net/hcdl/INDEX.HTM	38,500	71
065	Liberty Center Public Library	Liberty Center	http://library.norweld.lib.oh.us/LibertyCenter/	4,500	231
066	Greene County Public Library	Xenia	http://www.gcpl.lib.oh.us	136,731	12
067	East Palestine Memorial Public Library	East Palestine	http://www.east-palestine.lib.oh.us	5,700	187
068	Worthington Public Library	Worthington	http://www.worthington.lib.oh.us/	55,000	31
069	Montpelier Public Library	Montpelier	http://library.norweld.lib.oh.us/Montpelier/	36,369	204
070	Puskarich Public Library	Cadiz	http://winslo.state.oh.us/ppl/	16,000	145
071	Harris-Elmore Public Library	Elmore	http://library.norweld.lib.oh.us/Harris-Elmore/	15,000	165
072	Garnet A. Wilson Public Library of Pike County	Waverly	http://www.pike.lib.oh.us	NA	102
073	Massillon Public Library	Massillon	http://www.massillon.lib.oh.us	34,949	56
074	Mentor Public Library	Mentor	http://www.mentor.lib.oh.us	52,422	48
075	Oak Hill Public Library	Oak Hill	http://www.oakhill.lib.oh.us	NA	222
076	Porter Public Library	Westlake	http://ohionet.org/porter-public-library/index.htm	30,952	72
077	Nelsonville Public Library	Nelsonville	http://www.athens-county.lib.oh.us	60,000	46
078	Avon Lake Public Library	Avon Lake	http://www.kellnet.com/allib/alpl.htm	16,300	120

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079	Chillicothe and Ross County Public Library	Chillicothe	http://chillicothe.lib.oh.us	73,941	36
080	Cleveland Hts-University Hts Public Library	Cleveland Heights	http://www.chuhpl.lib.oh.us	66,700	21
081	Twinsburg Public Library	Twinsburg	http://www.Twinsburg.lib.oh.us	17,326	90
082	Henderson Memorial Library Association	Jefferson	http://www.henderson.lib.oh.us	10,000	199
083	Brumback Library	Van Wert	http://brumbacklib.com/	30,000	93
084	Girard Free Library	Girard	http://www.girard.lib.oh.us/	35,000	100
085	Morley Library	Painesville	http://www.morleylibrary.org	44,069	53
086	Defiance Public Library	Defiance	http://www.defiance.lib.oh.us/	39,825	66
087	Willoughby-Eastlake Public Library	Willoughby	http://www.wepl.lib.oh.us	NA	40
088	Westerville Public Library	Westerville	http://www.wpl.lib.oh.us/library/index.html	85,093	25
089	Logan County District Library	Bellefontaine	http://www.loganco.lib.oh.us/	42,310	69
090	Huron Public Library	Huron	http://library.norweld.lib.oh.us/Huron	NA	179
091	Wilmington Public Library of Clinton County	Wilmington	http://www.wilmington.lib.oh.us/	18,870	123
092	Columbus Metropolitan Library	Columbus	http://www.cml.lib.oh.us	743,640	4
093	Shaker Heights Public Library	Shaker Heights	http://www.shpl.lib.oh.us/	35,281	44
094	Carroll County District Library	Carrollton	http://www.carroll.lib.oh.us	26,521	125
095	Dayton & Montgomery County Public Library	Dayton	http://www.dayton.lib.oh.us/	573,809	5
096	North Baltimore Public Library	North Baltimore	http://library.norweld.lib.oh.us/North-Baltimore/	7,500	170
097	Martins Ferry Public Library	Martins Ferry	http://mfpl.org	36,205	80
098	Herbert Wescoat Memorial Library	McArthur	http://www.vintoncountypublic.lib.oh.us	NA	181

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099	Cuyahoga County Public Library	Parma	http://clio1.cuyahoga.lib.oh.us/home/index	608,000	3
100	Meigs County Public Library	Pomeroy	http://www.meigs.lib.oh.us	23,641	111
101	Wood County District Public Library	Bowling Green	http://www.wcnet.org/WCDPL/	61,000	59
102	Marion Public Library	Marion	http://library.norweld.lib.oh.us/Marion/	68,051	38
103	Carnegie Public Library	East Liverpool	http://www.carnegie.lib.oh.us	50,000	99
104	Willard Memorial Library	Willard	http://library.norweld.lib.oh.us/Willard	50,000	113
105	Stow-Munroe Falls Public Library	Stow	http://www.ohionet.org/~stowpub/	37,000	65
106	Preble County District Library	Eaton	http://www.pcdl.lib.oh.us	41,000	70
107	Blanchester Public Library	Blanchester	http://blanchester.lib.oh.us/	15,671	162
108	Newton Falls Public Library	Newton Falls	http://www.newtonfalls.lib.oh.us/	10,000	119
109	Upper Arlington Public Library	Upper Arlington	http://www.uapl.lib.oh.us	995,565	20
110	Putnam County District Library	Ottawa	http://www.putnamco.lib.oh.us/	NA	75
111	Andover Public Library	Andover	http://www.andover.lib.oh.us/	NA	215
112	London Public Library	London	http://www.london.lib.oh.us	NA	149
113	Elyria Public Library	Elyria	http://www.elyria.lib.oh.us	70,000	37

¹ From *American Library Directory*. 1998.

² From *Statistics of Ohio Libraries*. 1998.

REFERENCE LIST

- American library directory. 1998. New Providence, N.J.: R.R. Bowker.
- Bates, Marcia J., and Shaojun Lu. 1997. An exploratory profile of personal home pages: Content, design, metaphors. Online & CDROM Review 21, no. 6:331-339.
- Benton Foundation. 1996. Building, books, and bytes: Libraries and communities in the digital age. Washington, D.C.: Benton Foundation.
- Bertot, John Carlo, Charles R. McClure, and Patricia Diamond Fletcher. 1997. The 1997 national survey of U.S. public libraries and the Internet: Final report. Washington, D.C.: American Library Association, Office for Information Technology Policy.
- Burt, David. 1997. Policies for the use of public Internet workstations in public libraries. Public Libraries (May/June): 156-159.
- Champelli, Lisa, and Howard Rosenbaum. 1997. Neal-Schuman WebMaster. New York: Neal-Schuman Publishers.
- Clyde, Laurel A. 1996. The library as information provider: The home page. The Electronic Library 14, no. 6:549-558.
- Cohen, Laura B. 1997. Librarians on the Internet: The search for quality begins. Choice 34 (supplement): 5-17.
- Dodd, David G. 1996. Grass-roots cataloging and classification: Food for thought from World Wide Web subject-oriented hierarchical lists. Library Resources & Technical Services 40, no. 3:275-286.
- Garlock, Kristen L., and Sherry Piontek. 1996. Building the service-based library Web site. Chicago: American Library Association.

- Mansfield, Meribah. 1997. Ohio's OPLIN: The future of library service? Library Journal 122 (1 October):44-47.
- Neth, Marcy. 1998. Citation analysis and the Web. Art Documentation 17, no. 1:29-33.
- Piontek, Sherry, & Kristen Garlock. 1995. Creating a World Wide Web resource collection. Collection Building 14, no. 3:12-18.
- Rosenfeld, Louis B. 1994. Guides, clearinghouses, and value-added repackaging: Some thoughts on how librarians can improve the Internet. Reference Services Review 22, no. 4:11-16.
- Smith, Alastair G. 1997. Testing the surf: Criteria for evaluating Internet information resources. The Public-Access Computer Systems Review 8, no. 3:5-23.
- Statistics of Ohio libraries. 1998. Columbus, Ohio: State Library of Ohio.
- Still, Julie M., ed. 1997. The Library Web. Medford, N.J.: Information Today.

Using Links to Facilitate Access to Internet Resources:

A Content Analysis of Ohio Public Library Web Sites

This study analyzes the use of external links on Ohio public library Web sites, focusing on the methods used to facilitate access to Internet resources. Content analysis was conducted on the Ohio public library Web sites that were included on the list maintained by the State Library of Ohio on October 20, 1998. The categorization of links was analyzed, with specific focus on the organization, scope, and presentation of links arranged topically. This study suggests that the public libraries of Ohio are at different stages in the process of creating effective Web sites with well selected, organized, and presented links, but clearly are working toward the goal of providing enhanced access to Internet resources.

Of the 113 Web sites analyzed, 109 had at least one link to an Internet resource created and maintained outside of the library's Web site. Nearly 47% of the Web sites organized links topically, into Ready Reference areas. The organization and scope of the Ready Reference areas varied widely. The number of links provided in the Ready Reference areas ranged from one to 1718, with nearly 40% providing fewer than twenty-five links. Approximately 50% of Ready Reference areas were organized using a broad categorization scheme, with the remaining 50% listing links without using categories or categorizing randomly without any attempt at exhaustiveness. Annotations were the most commonly applied presentation technique studied, used by 62.2% of libraries that organized links into Ready Reference areas.